

**IN THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (Canceled):

Claim 2 (Withdrawn -- Currently Amended): The process of claim 13, wherein the lighting ~~The lighting device as claimed in claim 1, characterized in that said device~~ comprises  $\text{TiO}_2$  and has ~~in that its~~ photocatalytic activity, under radiation of wavelength centered on 365 nm and of  $50 \text{ W/m}^2$  power, which causes the rate of disappearance of palmitic acid deposited on said layer, determined by haze measurement and expressed relative to the amount of  $\text{TiO}_2$ , ~~[[is]]~~ to be at least  $10 \text{ nm.h}^{-1}.\mu\text{g}^{-1}.\text{cm}^2$ .

Claim 3 (Withdrawn -- Currently Amended): The process of claim 13, wherein The ~~lighting device as claimed in claim 1, characterized in that~~ said wall is essentially made of glass.

Claim 4 (Withdrawn -- Currently Amended): The process of claim 3, wherein The ~~lighting device as claimed in claim 3, characterized in that~~ the glass of the wall is ~~toughened in such a way that~~ for an area measuring  $50 \times 50 \text{ mm}$  breaks into at least 40 fragments.

Claim 5 (Withdrawn -- Currently Amended): The process of claim 4, wherein The ~~lighting device as claimed in claim 4, characterized in that~~ the glass of the wall is ~~toughened in such a way that~~ for an area measuring  $50 \times 50 \text{ mm}$  breaks into more than 60 fragments.



Claim 6 (Withdrawn -- Currently Amended): The process of claim 3, wherein ~~The lighting device as claimed in claim 3, characterized in that~~ at least in one region of the ~~[[its]]~~ surface of the device directed toward said photocatalytically active layer, the total content of alkali and alkaline-earth metal oxides of said glass wall does not exceed 15% by weight, while the sodium oxide content does not exceed 10% by weight.

Claim 7 (Withdrawn -- Currently Amended): The process of claim 13, wherein ~~The lighting device as claimed in claim 1, characterized in that~~ said wall is essentially made of ~~[[a]]~~ at least one transparent plastic ~~or of several plastics in combination.~~

Claim 8 (Withdrawn -- Currently Amended): The process of claim 3, wherein ~~The lighting device as claimed in claim 3, characterized in that~~ a barrier layer, preventing the diffusion of alkali metals from the glass, or a scratch-resistant layer, ~~especially based on silicon,~~ is inserted between said wall and said photocatalytically active layer.

Claim 9 (Withdrawn -- Currently Amended): The process of claim 13, wherein ~~The lighting device as claimed in claim 1, characterized in that~~ said photocatalytically active layer has a thickness of between 100 and 1000 nm and contains 1 to 100  $\mu\text{g}/\text{cm}^2$ , ~~preferably 2 to 65~~  $\mu\text{g}/\text{cm}^2$ , of  $\text{TiO}_2$ .

Claim 10 (Withdrawn -- Currently Amended): The process of claim 9, wherein ~~The lighting device as claimed in claim 9, characterized in that~~ it the device includes means for spraying liquid onto said photocatalytically active layer.



Claim 11 (Withdrawn -- Currently Amended): The process of claim 13, wherein The lighting device as claimed in claim 1, characterized in that said wall is coated at least on its face opposite said light source with said photocatalytically active layer.

Claim 12 (Withdrawn -- Currently Amended): The process of claim 13, wherein The lighting device as claimed in claim 1, characterized in that said layer comprises TiO<sub>2</sub> doped with Fe, Nb, Ta, Pt, Rh, Ag, Pd, Sn, Cd, W, Ce, Zr, Cu, Ru, Mo, Al, Bi, V, Co and/or Ni, optionally their oxides and/or salts, especially in particulate form with dimensions smaller than those of the TiO<sub>2</sub> particles and intimately blended or alloyed therewith.

Claim 13 (Previously Presented): A process for manufacturing a lighting device as claimed in claim 1, comprising a light source and a wall that lets at least a portion of the radiation emitted by said source pass therethrough, said wall having a coating over at least a portion of at least one of its two faces of a photocatalytically active layer, wherein under the lowest illumination conditions, the photocatalytic activity of said layer degrades the organic soiling and reduces said soiling to particles that do not adhere to said layer and can be easily removed therefrom, and/or to give said layer a hydrophilic character, wherein said process comprises forming in which said photocatalytically active layer as a mesoporous structure by a sol-gel method comprising:

- preparing a liquid composition comprising at least one precursor of an essentially mineral material constituting the mesoporous structure of said layer and at least one organic structuring agent;
- precipitating the precursor around the organic structuring agent and growing molecules derived from the precursor;



- adding into the liquid composition elementary crystallites or nanoparticles of optionally doped titanium oxide, with diameters between 0.5 and 100 nm;
- applying the composition to the surface to be coated; and
- eliminating the organic structuring agent, the titanium oxide crystallites being incorporated into the mesoporous structure while essentially maintaining their integrity.

~~is formed by a sol-gel method, by chemical vapor deposition (CVD) or atmospheric-pressure plasma-enhanced chemical vapor deposition (APPECVD), or under a vacuum or reduced pressure, especially by magnetically enhanced cathode sputtering (or magnetron sputtering).~~

Claim 14 (Canceled):

Claim 15 (Currently Amended): The process as claimed in claim ~~[[14]]~~ 13, which is carried out at temperatures not exceeding 250°C, ~~so as in particular to preserve conventional toughening of glass.~~

Claim 16 (Canceled):

17. (New). The process of claim 14, wherein at least some of the titanium oxide crystallites aggregate as nanoparticles in the mesoporous structure.

18. (New). The process of claim 9, wherein said photocatalytically active layer has a thickness of between 2 to 65  $\mu\text{g}/\text{cm}^2$  of  $\text{TiO}_2$ .



19. (New). The process of claim 13, wherein said layer comprises  $\text{TiO}_2$  doped with Fe, Nb, Ta, Pt, Rh, Ag, Pd, Sn, Cd, W, Ce, Zr, Cu, Ru, Mo, Al, Bi, V, Co and/or Ni, optionally their oxides and/or salts, in particulate form with dimensions smaller than those of the  $\text{TiO}_2$  particles and blended or alloyed therewith.